

Part 1 General

1.1 Demolition of asbestos can be hazardous to Health. Should material resembling asbestos be encountered in course of demolition work STOP WORK and notify Departmental Representative IMMEDIATELY. Do not proceed until written instructions have been received from Departmental Representative. Refer to Drawings.

1.2 ALTERATION PROJECT PROCEDURES

- .1 Materials: As specified in Product sections; match existing Products and work for patching and extending work.
- .2 Employ skilled and experienced installer to perform alteration work.
- .3 Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- .4 Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to original or specified condition.
- .5 Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.
- .6 Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- .7 When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Consultant for review.
- .8 Where a change of plane of 6 mm or more occurs, request instructions from Consultant.
- .9 Patch or replace portions of existing surfaces which are damaged, lifted, discoloured, or showing other imperfections.
- .10 Finish surfaces as specified in individual Product sections.

1.3 CLOSEOUT SUBMITTALS

- .1 Refer to Section 01 78 00 Closeout Submittals.
- .2 Record Documentation: Accurately record actual locations of capped utilities, subsurface obstructions, and conditions that differ from construction documents.

1.4 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and reconnection.

- .2 Obtain required permits from authorities.
- .3 Do not close or obstruct egress width to any building or site exit.
- .4 Do not disable or disrupt building fire or life safety systems without three (3) days prior written notice to Departmental Representative.
- .5 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.5 SCHEDULING

- .1 Section 01 33 00 Submittal Procedures.
- .2 Schedule Work to coincide with new construction.
- .3 Describe demolition removal procedures and schedule.

1.6 PROJECT CONDITIONS

- .1 Conduct demolition to minimize interference with adjacent and occupied building areas.
- .2 Cease operations immediately if structure appears to be in danger and notify Departmental Representative. Do not resume operations until directed.

Part 2 Products

- .1 Not Used

Part 3 Execution

3.1 PREPARATION

- .1 Provide, erect, and maintain temporary barriers.
- .2 Erect and maintain weatherproof closures for exterior openings.
- .3 Erect and maintain temporary partitions to prevent spread of dust, odours, and noise to permit continued occupancy.
- .4 Protect existing materials and equipment which are not to be demolished.
- .5 Prevent movement of structure; provide bracing and shoring.
- .6 Notify affected utility companies before starting work and comply with their requirements.
- .7 Mark location and termination of utilities.
- .8 Provide appropriate temporary signage including signage for exit or building egress.

3.2 DEMOLITION

- .1 Disconnect, remove, and cap and identify designated utilities within demolition areas.
- .2 Demolish in an orderly and careful manner. Protect existing supporting structural members.
- .3 Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- .4 Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removal of lead materials using a power tool with an effective dust collection system equipped with a HEPA filter on walls, floors, ceilings, equipment and ductwork in the area of construction.
 - .2 Removal of lead materials with non-powered hand tool, other than manual scraping and sanding on walls, floors, ceilings, equipment and ductwork in the area of construction.

1.2 REFERENCES

- .1 Department of Justice Canada
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .3 Human Resources and Social Development Canada (HRSDC)
 - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 U.S. Environmental Protection Agency (EPA)
 - .1 EPA 747-R-95-007, Sampling House Dust for Lead.
- .6 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)
 - .1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 4th Edition (1994).
- .7 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances
 - .1 Lead in Construction Regulation - 29 CFR 1926.62.
- .8 Underwriters' Laboratories of Canada (ULC)

1.3 DEFINITIONS

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Authorized Visitors: Departmental Representative or designated representatives.

- .3 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects over cuts and tears, and elsewhere as required to provide protection and isolation. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .5 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m³) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead materials by methods noted in paragraph 1.1.
- .6 Competent person: individuals capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.
- .7 Lead dust: wipe sampling on vertical surfaces and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead materials waste in accordance with requirements of authority having jurisdiction.
- .3 Provide proof of Contractor's General Insurance.
- .4 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of lead materials waste and proof that lead materials waste has been received and properly disposed.
 - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead materials, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29 Safety Requirements.
 - .2 Safety Requirements: worker and visitor protection.

- .1 Protective equipment and clothing to be worn by workers and visitors in work Area include:
 - .1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of 10, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient amount of filters.
 - .2 Half mask respirator: half-mask particulate respirator with [N] [R] [P] - series filter, and 99 % efficiency could be provided.
- .2 Eating, drinking, chewing, and smoking are not permitted in work area.
- .3 Ensure workers wash hands and face when leaving work area.
- .4 Visitor Protection:
 - .1 Provide approved respirators to Authorized Visitors to work areas.
 - .2 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .2 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .3 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.7 SCHEDULING

- .1 Not later than two days before beginning Work on this Project notify following in writing:
 - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
 - .2 Provincial Ministry of Labour.
 - .3 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

1.8 OWNER'S INSTRUCTIONS

- .1 Provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.
- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Proper fitting of equipment.

- .2 Inspection and maintenance of equipment.
- .3 Disinfecting of equipment.
- .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

Part 2 Products

2.1 MATERIALS

- .1 Polyethylene 0.15mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
- .3 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual lead materials residue.
- .4 Lead waste containers: metal or fibre type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.
 - .1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

Part 3 Execution

3.1 SUPERVISION

- .1 One Supervisor for every ten workers is required.
- .2 Supervisor must remain within work area during disturbance, removal, or handling of lead materials.

3.2 PREPARATION

- .1 Remove and store items to be salvaged or reused.
 - .1 Protect and wrap items and transport and store in area specified by Departmental Representative.
- .2 Work Area:
 - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.
 - .2 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.
 - .3 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.
 - .4 Seal off openings with polyethylene sheeting and seal with tape.

- .5 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.
 - .6 Where water application is required for wetting lead containing materials, provide temporary water supply appropriately sized for application of water as required.
 - .7 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.
- .3 Do not start work until:
- .1 Arrangements have been made for disposal of waste.
 - .2 Tools, equipment, and materials waste containers are on site.
 - .3 Arrangements have been made for building security.
 - .4 Notifications have been completed and preparatory steps have been taken.

3.3 LEAD ABATEMENT

- .1 Removal of lead with a vacuum equipped with HEPA filters.
- .2 Dispose of vacuum filters in seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to staging area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .3 After completion of vacuuming, wet sponge surface from which lead has been removed to remove any visible material. During this work keep surfaces wet.
- .4 Do not disturb work area for 8 hours. No entry, activity, ventilation, or disturbance during this period.

3.4 INSPECTION

- .1 Perform inspection to confirm compliance with specification and governing authority requirements.
- .2 Departmental Representative will inspect work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.5 LEAD SURFACE SAMPLING - WORK AREAS

- .1 Final lead surface sampling to be conducted as follows:
 - .1 After work area has passed a visual inspection for cleanliness approved and accepted by Departmental Representative. Apply coat of lock-down agent to surfaces within enclosure, and appropriate setting period of 8 hours has passed, Departmental Representative will perform lead wipe sampling.

- .1 Final lead wipe sampling results from horizontal and vertical surfaces must show lead levels of less than 40 micrograms of lead in dust per square foot. Samples collected and analyzed in accordance with EPA 747-R-95-007.
- .2 If wipe sampling results show levels of lead in excess of 40 micrograms per square foot, re-clean work area at contractor's expense and apply another acceptable coat of lock-down agent to surfaces.
- .3 Repeat as necessary until fibre levels are less than 40 micrograms per square foot.

3.6 FINAL CLEANUP

- .1 Following cleaning and when lead wipe surfaces sampling are below acceptable concentrations, proceed with final cleanup.
- .2 Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum.
- .3 Place polyethylene sheets, tape, cleaning material, clothing, and contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

3.7 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

END OF SECTION